

CLAIMS

1. A high purity hafnium material, and a target and thin film formed from said material, wherein the zirconium content is 1 to 1000wtppm, and the purity thereof is 4N to 6N excluding gas components such as carbon, oxygen and nitrogen.
- 5 2. The high purity hafnium material, and the target and thin film formed from said material according to claim 1, wherein oxygen is 500wtppm or less, nitrogen and carbon are respectively 100wtppm or less, iron, chromium and nickel are respectively 10wtppm or less, and the purity thereof is 4N to 6N excluding gas components such as carbon, oxygen and nitrogen.
- 10 3. A manufacturing method of high purity hafnium including the steps of making aqueous solution of chloride of hafnium, thereafter removing zirconium therefrom via solvent extraction, performing neutralization treatment to obtain hafnium oxide, further performing chlorination to obtain hafnium chloride, and reducing this to obtain a hafnium sponge.
- 15 4. The manufacturing method of high purity hafnium according to claim 3, wherein the moisture content in the hafnium chloride before reduction and in the atmosphere is 0.1wt% or less, and the nitrogen content therein is 0.1wt% or less.
5. The manufacturing method of high purity hafnium according to claim 3 or claim 4, wherein the reduction atmosphere is argon atmosphere, and reduction is
20 performed under a positive pressure of 1 atmospheric pressure or greater.
6. The manufacturing method of high purity hafnium according to any one of claims 3 to 5, wherein electron beam melting is further performed to the hafnium sponge in order to obtain a hafnium ingot.
7. The manufacturing method of high purity hafnium according to any one of
25 claims 3 to 6, wherein hafnium chloride is reduced with metal having stronger chloridization power than hafnium.
8. The manufacturing method of high purity hafnium according to any one of claims 3 to 7, wherein the zirconium content is 1 to 1000wtppm, and the purity thereof is 4N to 6N excluding gas components such as carbon, oxygen and nitrogen.
- 30 9. The manufacturing method of high purity hafnium according to claim 8, wherein oxygen is 100wtppm or less, nitrogen and carbon are respectively 30wtppm or less, iron, chromium and nickel are respectively 5wtppm or less, and the purity thereof is 4N to 6N excluding gas components such as carbon, oxygen and nitrogen.